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Search: L24

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Search History

DATE: Tuesday, December 25, 2007 **Purge Queries** Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L24	L20 same shortened	0	L24
L23	L20 same euclid$	0	L23
L22	L20 same l1	0	L22
L21	L20 same position	3	L21
L20	L19 same encod$	36	L20
L19	L8 same polynomial same remainder	153	L19
L18	L16 same polynomial	3	L18
L17	L16 same polynomial same remainder	0	L17
L16	L12 same encod$	1859	L16
L15	L14 and l10	0	L15
L14	L2 same position	13	L14
L13	L12 same l2	1	L13
L12	predetermined adj1 position	212310	L12
L11	L10 and l2	3	L11
L10	L8 same remainder same polynomial	153	L10
L9	L8 same l2	3	L9

L8	galois adj1 field	2296	L8
L7	L2 same remainder same polynomial	5	L7
L6	L5 same l2	0	L6
L5	remainder adj1 polynomial	306	L5
L4	L3 same polynomial	8	L4
L3	L2 same reed-solomon	19	L3
L2	L1 same encoding	112	L2
L1	shortened near3 code	898	L1

END OF SEARCH HISTORY

L4: Entry 4 of 8 File: USPT Dec 3, 2002

DOCUMENT-IDENTIFIER: US 6490243 B1
TITLE: Information data multiplex transmission system, its multiplexer and demultiplexer and error correction encoder and decoder

Brief Summary Text (51):
(21) In the configuration of (20), the error correction encoding means includes: an encoder main body for conducting error correction encoding processing on the second information data which has been shift-input by using a shortened Reed-Solomon code; and an order reversal means for shift-inputting a plurality of information elements forming the second information data to the encoder main body in descending order of term degree of an information polynomial and causing the information elements to be subjected to error correction encoding processing.

CLAIMS:

9. A transmitting apparatus comprising: an error detection code addition means for adding an error detection code to first information data to be transmitted and outputting second information data; an error correction encoding means for encoding the second information data output from said error detection code addition means using an error correction code formed of a shortened Reed-Solomon code and outputting third information data, wherein said error correction encoding means further comprises: an encoder main body for conducting error correction encoding processing on the second information data which has been shift-input by using a shortened Reed-Solomon code, and an information data input means for shift-inputting a plurality of information elements forming said second information data to said encoder main body in descending order of term degree of an information polynomial and causing the information elements to be subjected to error correction encoding processing; and a header addition means for adding a control header having control information representing a transmission form of said information data inserted therein to the third information data output from said error correction encoding means.

17. An information data transmitting apparatus for use in a data communication system, comprising: means for adding an error detection code to a first variable-length information data to obtain a second variable-length information data; error correction encoding means for encoding the second variable-length information data with a shortened Reed-Solomon code to obtain a third variable-length information data; wherein the error correction encoding means comprises a shift register having a shift-inputting means for shift-inputting a plurality of information elements that constitute the second variable-length information data and that are formed as an information polynomial, the shift-inputting means inputting the information elements in descending order of term degree of the information polynomial; and means for transmitting the third variable-length information data to a reception side for reproduction of the first variable-length information data.

L9: Entry 1 of 3 File: USPT Apr 4, 2006

DOCUMENT-IDENTIFIER: US 7024616 B2
TITLE: Method for encoding/decoding error correcting code, transmitting apparatus and network

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20010053225 A1	December 20, 2001

Description Paragraph (96):
When code subblocks 10-i for the C1-encoding comprise 16 subblocks each having a length of 255 bytes corresponding to each of 16 rows, either of the following two can be employed as the C1 code: an eight-error-correcting RS code (255, 239); and an eleven-error-correcting shortened BCH code (2040, 1919) based on Galois field (2048).

Description Paragraph (99):
In FIG. 4, with m set to one, 255 code subblocks 20-j for the C2-encoding exist, wherein each code subblock has its bits arranged serially in the column direction. In this case, either of the following two can be employed as the C1 code: a single-error-correcting shortened RS code (18, 16); and a double-error-correcting shortened BCH code (144, 128) based on Galois field (256).

Description Paragraph (100):
Alternatively, when m is set to two to create 128 code subblocks 20-j for the C2-encoding, and one column lacking in the last code subblock 20-128 is regarded virtually as zero, either of the following two may be employed as the C2 code: a double-error-correcting shortened RS code (36, 32); and a triple-error-correcting BCH code (288, 261) based on Galois field (512).

Description Paragraph (101):
Further alternatively, when m is set to eight to create 32 code subblocks 20-j for the C2-encoding, and one column lacking in the last code subblock 20-32 is regarded virtually as zero, either of the following two may be employed as the C2 code: an eight-error-correcting shortened RS code (144, 128); and an eleven-error-correcting shortened BCH code (1152, 1031) based on Galois field (2048).

CLAIMS:

3. A method for encoding an error correcting code according to claim 2, wherein: said A is set to 1; said B is set to 128; said C is set to 238; said D is set to 15/14; said E is set to 255; said J is set to 19; said L is set to 1; said P is set to 112; said Q is set to 8; and said R is set to 15/14; said outer code .LAMBDA. comprises either an eight-error-correcting Reed-Solomon code on Galois field, or an eleven-error-correcting shortened BCH code based on Galois field; and said inner code .PSI. comprises either an eight-error-correcting shortened Reed-Solomon code on Galois field, or an eleven-error-correcting shortened BCH code based on Galois field.

10. A method for encoding an error correcting code according to claim 9, wherein: said A is set to 1; said B is set to 128; said C is set to 238; said D is set to 15/14; said E is set to 255; sand F is set to 16; said G is set to 144; said H is set to 1; said J is set to 255; and said L is set to 1; said outer code .LAMBDA. comprises either an eight-error-correcting Reed-Solomon code on Galois field, or an eleven-error-correcting shortened BCH code based on Galois field; and said inner code .PSI. comprises either a

single-error-correcting shortened Reed-Solomon code on Galois field, or a double-error-correcting shortened BCH code based on Galois field.

11. A method for encoding an error correcting code according to claim 9, wherein: said A is set to 1; said B is set to 112; said C is set to 238; said D is set to 15/14; said E is set to 255; said F is set to 16; said G is set to 128; said H is set to 1; said J is set to 255; and said L is set to 1; said outer code .LAMBDA. comprises either an eight-error-correcting Reed-Solomon code on Galois field, or an eleven-error-correcting shortened BCH code based on Galois field; and said inner code .PSI. comprises either a single-error-correcting shortened Reed-Solomon code on Galois field, or a double-error-correcting shortened BCH code based on Galois field.

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0308868 21 July 2003 (21.07.2003) FR

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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— *of inventorship (Rule 4.17(iv)) for US only*
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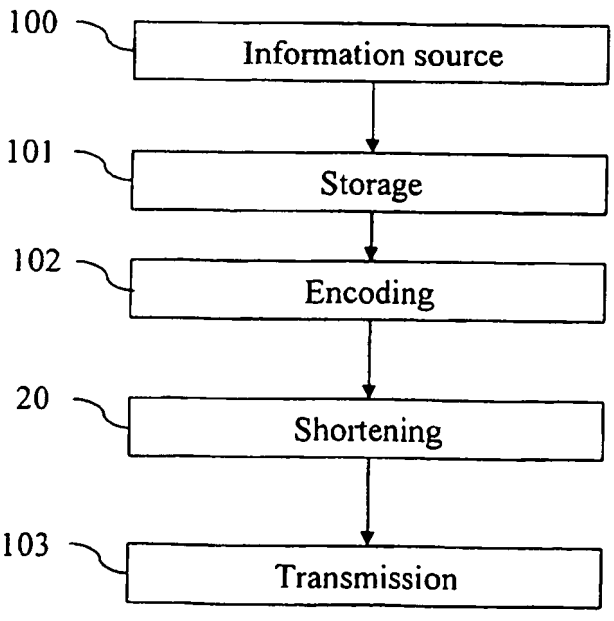
[Continued on next page]

(54) Title: INFORMATION ENCODING BY SHORTENED REED-SOLOMON CODES



(57) Abstract: The present invention concerns an encoding method in which encoding is performed of any information word a of length k in the form of a word v belonging to a Reed-Solomon code C of dimension k' and length n' (with $n'-k' = n - k$) such that the components of v' situated in (n'-n) *arbitrary* predetermined positions be systematically equal to respective predetermined constants (for example, all zero). The possibility then exists of deleting those components of fixed value to obtain a word v of length n belonging to a code C, which thus constitutes a code that is shortened with respect to code C. The invention also relates to devices and apparatuses adapted to implement the encoding method. The invention may be used for encoding by means of an algebraic geometric code, when such encoding may be implemented by encoding by means of a plurality of shortened Reed-Solomon codes.

WO 2005/008900 A1

End of Result Set

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L13: Entry 1 of 1 File: EPAB Jan 27, 2005

DOCUMENT-IDENTIFIER: WO 2005008900 A1
TITLE: INFORMATION ENCODING BY SHORTENED REED-SOLOMON CODES

Abstract Text (1):
The present invention concerns an encoding method in which encoding is performed of any information word a of length k in the form of a word v' belonging to a Reed-Solomon code C of dimension k' and length n' (with n'-k'= n - k) such that the components of v' situated in (n'-n) arbitrary predetermined positions be systematically equal to respective predetermined constants (for example, all zero). The possibility then exists of deleting those components of fixed value to obtain a word v of length n belonging to a code C, which thus constitutes a code that is shortened with respect to code C. The invention also relates to devices and apparatuses adapted to implement the encoding method. The invention may be used for encoding by means of an algebraic geometric code, when such encoding may be implemented by encoding by means of a plurality of shortened Reed-Solomon codes.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(30) Priority Data:
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(71) Applicant *(for all designated States except US)*: **CANON KABUSHIKI KAISHA** [JP/JP]; 3-30-2, Shimomaruko, 3-chome, Ohta-ku, Tokyo (JP).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PIRET, Philippe** [BE/FR]; 4, boulevard des Métairies, F-35510 Cesson-Sevigne (FR). **LE BARS, Philippe** [FR/FR]; 12, rue du Manoir, F-35235 Thorigne-Fouillard (FR). **LEHOBEY, Frédéric** [FR/FR]; 185, rue des Fougères, F-35700 Rennes (FR).

(74) Agent: **PETIT, Maxime**; Santarelli, 14, avenue de la Grande Armée, F-75017 Paris (FR).

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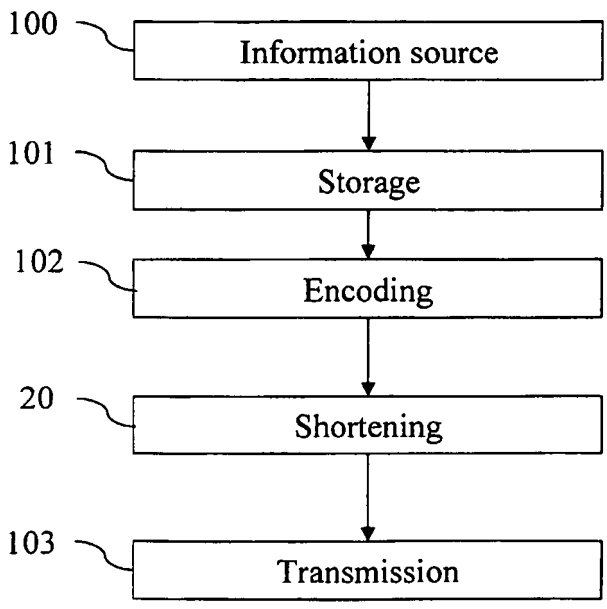
[Continued on next page]

(54) Title: INFORMATION ENCODING BY SHORTENED REED-SOLOMON CODES



(57) Abstract: The present invention concerns an encoding method in which encoding is performed of any information word a of length k in the form of a word v belonging to a Reed-Solomon code C of dimension k' and length n' (with $n'-k' = n - k$) such that the components of v' situated in (n'-n) *arbitrary* predetermined positions be systematically equal to respective predetermined constants (for example, all zero). The possibility then exists of deleting those components of fixed value to obtain a word v of length n belonging to a code C, which thus constitutes a code that is shortened with respect to code C. The invention also relates to devices and apparatuses adapted to implement the encoding method. The invention may be used for encoding by means of an algebraic geometric code, when such encoding may be implemented by encoding by means of a plurality of shortened Reed-Solomon codes.

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(54) Error detection and correction in digital communication systems.

(57) An error detection and correction system for locates and corrects double errors in a received data block word digitally encoded in a Reed-Solomon code (n,K) as coefficient terms of an n-order codeword polynomial in the form

$$C(x) = \sum_{i=0}^{n-1} c_i x_i$$

where the coefficients are powers of the primitive â of a Galois field, which codeword is divisible by a code generator polynomial in the form of a product of a plurality of different factors in the form $(x + â^i)$. Four syndrome signals are derived each corresponding to a respective first order syndrome equal to the remainder upon dividing a received data block word by a respective factor. An error locator responsive to the four syndrome signals derives a reference signal corresponding to the position h of a reference term in the received data block word spaced relative to the two terms containing errors, and a relative position signal k corresponding to the number of terms by which the terms containing the errors are spaced from the reference term. An error solution circuit responsive to the four syndrome signals produces first and second error solution signals corresponding to the differences between the respective received terms containing the errors and the corresponding terms as encoded. An error correction circuit adds the error solution signals to the received data block at the proper places to reproduce the encoded codeword. A fifth syndrome signal may be used to determine if there are more than two errors. Two syndromes may be used to correct single errors.

Fig. 2.